



Spotlight on Sustainable Finance and Managerial Accounting: The Analytical Triad for A Profitable and Sustainable Future

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Abstract

This study, focused on sustainable finance and management accounting, explores the analytical triad of vsCHA (Value and Supply Chain Analysis), COA (Cost Analysis), and CIA (Continuous Improvement Analysis), examining their interactions and their impact on firm sustainability. Data were collected from 208 companies in Kosovo between 2021 and 2023 and analyzed using exploratory factor analysis (EFA), confirmatory factor analysis (CFA), and structural equation modeling (SEM) with SPSS (64-bit) and AMOS (26.0) software. The results validate the analytical triad of vsCHA, COA, and CIA as a reliable model for enhancing sustainable finance and management accounting, promoting both profitability and long-term sustainability. Significant positive relationships were found between vsCHA and COA, and between CIA and COA, with COA acting as a mediator. The study confirms that vsCHA aids in identifying market trends, optimizing supply chains, and guiding innovation, while CIA helps maintain competitive advantage, boost sales, and improve efficiency. COA facilitates the implementation of competitive practices, ensuring sustainable business practices. Ultimately, the findings highlight the direct and positive impact of vsCHA, COA, and CIA on firm sustainability, driving efficiency, cost optimization, and continuous improvement. Future research should explore the global application of this triad.

Keywords: Sustainable Finance, Management Accounting, Profitability, Sustainable Future, Analytical Triad, Cost Analysis, Value Supply Chain Analysis, Continuous Improvement Analysis, Structural Equation Modelling

JEL Classifications: D24, C5, E3, G3

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1. Introduction

In today's business environment, balancing profitability with sustainability presents a significant challenge for companies. This paper explores the interconnectedness of three critical factors—Value Chain Analysis (VCA), Cost Analysis (CA), and Continuous Improvement Analysis (CIA)—as part of an analytical triad that underpins sustainable finance and managerial accounting. The integration of these three factors is crucial in advancing sustainable business practices by improving operational efficiency, cost management, and value creation throughout the supply chain. While prior research has addressed individual aspects of sustainable finance, such as the role of big data analytics in creating sustainability (Naeem et al., 2023; Adejumo et al., 2022), the relationship between these factors and their collective impact on sustainable finance has not been sufficiently explored. For instance, Hussain et al. (2023) emphasized the significance of climate finance, and Glémain (2011) and Teichmann et al. (2023) explored the growing role of responsible finance and FinTech in fostering sustainable financial practices. Similarly, studies by Wolf et al. (2020) highlighted factors shaping the identity of accounting managers, while Ojasalo (2001) and Roslender et al. (2023) discussed how customer value and strategic management accounting contribute to sustainable practices. The role of firms in complying with legal frameworks to ensure cooperation with government agencies for financial sustainability is also discussed by Lulaj (2021). Larger firms tend to be in a better financial position, while smaller firms face a higher risk of bankruptcy if sales are not profitable. Cost-volume-profit (CVP) analysis, as noted by Lulaj & Iseni (2018), helps to set clear business objectives, thereby increasing profitability and sustainability. In the context of family firms, Hiebl (2013) and Senftlechner & Hiebl (2015) highlighted the importance of managerial accounting practices. In addition, Lin et al. (2023) provided insights into the role of digital technology and supply chain management in promoting supply chain sustainability, while Franzò & Urbinati (2023) defined a taxonomy of multi-stakeholder platforms for creating circular supply chains. The impact of the Covid-19 pandemic on supply chains and business performance is also highlighted by Meyer et al. (2023), and the value of collaboration with supply chain partners in driving innovation is noted by Arsawan et al. (2023).

Building on these studies, this paper seeks to examine how the analytical triad of VCA, CA, and CIA can be leveraged together to foster sustainable finance. Understanding the dynamic relationships between these factors will provide valuable insights for companies looking to improve their operational efficiency, cost management, and value creation processes. By uncovering the complex interactions within this triad, this study aims to contribute to the development of a more sustainable and profitable business model in the context of sustainable finance and managerial accounting.

2. Review of Literature and Hypothesis Development

Numerous studies examine the interrelationship between sustainable finance, management accounting, profitability, and the analytical triad of value and supply chain analysis (vsCHA), cost analysis (COA), and continuous improvement analysis (CIA). To provide context, sustainable finance refers to financial practices that integrate environmental, social, and governance (ESG) criteria into decision-making, with the aim of fostering long-term sustainable growth.

Saidane & Ben Abdallah (2021) synthesized research on sustainable development in finance, highlighting its significant growth since the mid-1990s, driven by the United Nations and various NGOs. According to Ahmad et al. (2023), intellectual capital and corporate social responsibility (CSR) positively impact the sustainable competitive performance of SMEs, as well as the awareness of sustainable finance in enhancing business risk resilience through innovation. Technology adoption has further fueled this trend (Azadda et al., 2023).

In terms of management accounting, significant contributions have been made, including suggestions for changes in practices from Nielsen (2018). Hariyati et al. (2019) examined the relationship between management accounting innovation strategies and financial performance, while Eendenich et al. (2016) identified the importance of strong management accounting efforts within companies, emphasizing the need for clear lessons (such as educating management accountants) to achieve profitability and a sustainable future.

Umar & Al-Faryan (2023) found that the cash conversion cycle and accounts receivable period negatively affect firm profitability, while the accounts payable period increases profitability. On the other hand, Hristov et al. (2023) found a significant positive effect of stakeholder needs on firm profitability, particularly with regard to higher returns on sales.

Van Raaij (2005) emphasized that understanding profitability at the customer level and distributing profitability among customers improves decision-making, investment strategies, and pricing strategies, ultimately driving profitability growth. According to Negi & Jaiswal (2024), there is an increasing focus on sustainable financial instruments, particularly sustainable bonds, reflecting the growing demand for financial products that align with sustainability goals. Finally, Maiga (2015) argued that the internal and external integration of information technology has no direct impact on firm profitability, stressing that firms should prioritize intervention processes, such as business strategy, to achieve higher profitability.

2.1 The Context of Sustainable Finance and Management Accounting for a Profitable and Sustainable Future for Businesses through Value and Supply Chain Analysis (vsCHA)

To spotlight sustainable finance and managerial accounting through the analytical triad, this section will analyze one of the factors of this triad vsCHA (value supply Chain Analysis), therefore emphasizing that vsCHA is an essential field in business management for increasing profitability and sustainable future, where the goal is to understand and improve the efficiency of supply processes and create added value at each step of the chain. In essence, the various reviews and contributions of the authors mark a significant advance in the understanding of the influences of various factors in this field. Therefore, the authors, Li & Hu, 2012, used the prisoner's dilemma model to highlight the importance of knowledge sharing in the supply chain, arguing that this sharing contributes to increasing the efficiency and profits of firms in the supply sector. From another perspective, Wei et al., 2023 showed that in the context of high uncertainty in the business environment, improving the sustainability of the supply chain is essential. Their results highlighted the positive relationship between business and information technology (IT) fit and supply chain sustainability, noting that market orientation also has an increasing influence on this relationship. According to Feng et al., 2022, the important contribution to understanding the influence of supply chain integrity on the design of business models for innovation is emphasized using the theory of organizational learning. In the context of supply chain risks, (Meng & Wu, 2023) present a methodology for risk assessment and trend identification using a Markov model to predict future risks and

strengthen supply and value chain resilience. According to Zimmermann et al., 2020, it is emphasized that the combination of innovative capabilities and supply chain strategies can provide more opportunities to improve business performance. However, according to Abouzid & Saidi (2023), the presentation of a new methodology to implement digitalization in the supply chain is emphasized to increase profitability, financial stability, and managerial accounting transactions. A similar idea to increase profitability through vsCHA is emphasized by Alamelu et al. (2023), where the impact of supply chain and circular economy initiatives on the performance of companies and SMEs is highlighted, noting the importance of a strategic approach in this context. As for, according to Seiler et al. (2020), the influence of the position of companies in an extended supply chain network on financial performance was highlighted, suggesting the inclusion of linkage metrics in the analysis of their performance. According to Schneider et al. (2010) and Mouzas & Bauer (2022), business models are identified by addressing the impact of different policies on operational efficiency, market efficiency and financial resilience, contributing to the understanding of the dynamic interaction of performance systems. According to Rukanova et al. (2023), the study examines the creation of public value through digital infrastructure to increase business value, while Schilling & Seuring (2023) analyzed the impact of mobile financial services in creating sustainable value in supply chains in developing countries, including the interaction of local conditions and technological innovations. Carraresi & Bröring (2021) emphasized the need for innovation in the business model and the ability to adapt to change. Meanwhile, according to Wang et al. (2022), a method is proposed for the decomposition of production activities, and they identify the impact of global value chains on business cycles and economic growth. According to Oesterreich et al. (2022), it is emphasized that social factors have a greater impact on business value, while Bischoff et al. (2023) presented a framework of adaptive communication of customer value, emphasizing the interaction of signals by members of the buying center. Hasan et al. (2019) found in their study that the use of information technology has an impact on improving operational efficiency and competitive advantage. Therefore, based on the findings of the authors mentioned below, we raised hypothesis 1 to derive the results of this study of the analytical triad (vsCHA).

Hypothesis 1 (H1): value and supply chain analysis (vsCHA) has a complex positive effect on cost analysis (COA) in the context of sustainable finance and managerial accounting for a profitable and sustainable future for businesses.

2.2. The Context of Sustainable Finance and Management Accounting for a Profitable and Sustainable Future for Businesses through Cost Analysis (COA)

In order to spotlight sustainable finance and managerial accounting through the analytical triad, this section will analyze another factor of this triad, COA (cost analysis); therefore, the numerous studies in the field of cost analysis offer a rich and complex perspective. According to Bodendorf et al. (2022) they emphasized the challenges of cost management in the analysis of acquisition costs, and then according to Sakthivel (2023) the identification of ongoing costs in the cost analysis and the repeated benefits after each profit improvement are emphasized. The authors, Khodabakhshi & Ahmadi (2022), contributed to the field of stochastic optimization by proposing an improved problem for competitive advantage assessment and cost-benefit analysis. Meanwhile, according to Chatzipetrou & Moschidis (2018), it sheds light on the qualitative analysis of increasing the quality of financial stability and improving managerial accounting. According to Guerreiro et al. (2008), the role of cost measurement for services is defined, comparing this methodology with classical paradigms and arguing its specific value for the analysis of customer benefits and business sustainability. The authors, Patil et al. (2021),

presented a generalized framework for life cycle cost analysis of repairable systems, using the principles of reliability and maintainability in business. While the authors, Ibrahim et al. (2022), shed light on consumer preferences and decision-making regarding the financial costs of the quantitative and qualitative approach, assessing how these affect marketing strategies to increase profitability. Settanni & Emblemståg(2010) discussed how production and cost planning can be effectively and transparently integrated into a vertically integrated production process for a sustainable future in sustainable finance and management accounting. According to Guinot et al. (2017), cost data are used in simulations, analyzing their derivation from surveys and analysis of the production cost structure, including nominal costs for product/service quality issues. On the other hand, according to Hoch & Chaussé (2018), a set of cost-effectiveness data is examined by connecting cost-effectiveness analysis with net profit regression to increase the profitability and sustainable future of the business. Therefore, based on the findings of the authors mentioned below, we raised hypothesis 2 to derive the results of this triad analysis (COA) research.

Hypothesis 2 (H2): continuous improvement analysis (CIA) has a complex positive effect on cost analysis (COA) in the context of sustainable finance and managerial accounting for a profitable and sustainable future for businesses.

The context of sustainable finance and management accounting for a profitable and sustainable future for businesses through continuous improvement analysis (CIA).

To spotlight sustainable finance and managerial accounting through the analytical triad, in this section, the last factor of this triad, CIA (continuous improvement analysis), will be analyzed, therefore the research analysis and the authors' contributions related to continuous improvement reveal some main dimensions. The analysis of Oprime et al. (2012) emphasized the importance of staff training and operational practices in improving productivity and company performance. Then Gonzalez & Martins (2016) highlighted that they identify a higher level of employee engagement in different sectors of the company, linking engagement to the success of the continuous improvement program in the company. Furthermore, according to Lam et al. (2015) and Ershadi et al. (2019), they concluded that effective influence tactics (cooperation, consultation, encouragement, inspirational appeals, and rational persuasion) and customer behavior through quality improvement and innovation have a significant effect on employee engagement and quality improvement, affecting the growth of sustainable finances and the improvement of transactions in managerial accounting. The skills maturity model from Omotayo et al. (2020) provided an approach to the different levels of continuous improvement in the organization. While the authors, Zighan & Ruel (2023), noted that continuous improvement contributes to the resilience of SMEs in the short and long term. According to Wickramasinghe & Chathurani (2021), they emphasized that continuous improvement initiatives positively impact performance management and employee involvement, influencing increased profitability and a sustainable future in organizations. The analyses of Witell et al. (2005) showed that the configurations of improvement programs can have varying impacts on their success. According to Hohan et al. (2015), they underscored in their research the evaluation of the assessment model and the improvement of information security in the context of business success. The authors, Delias & Nguyen (2021), highlighted the importance of using information to help organizations improve their processes. According to Lee (2004) in his study, he found that trust and organizational identification are linked to continuous efforts for employee improvement, aiming to increase business profitability and ensure a sustainable future. On the other hand, according to Yuen et al. (2016), they emphasized that companies with high continuous improvement capabilities are more successful in improving corporate

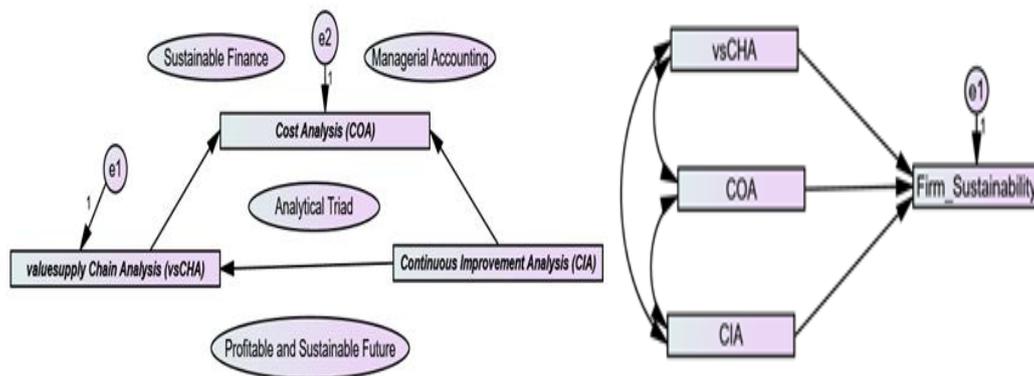
social performance and business outcomes. Accordingly, developing improvement programs gradually and at regular intervals is crucial. Therefore, based on the findings of the authors mentioned below, we formulated hypothesis 3 to derive the results of this research within the analytical triad (CIA).

Hypothesis 3 (H3): cost analysis (COA) mediates the indirect effect of continuous improvement analysis (CIA) on value and supply chain analysis (vsCHA) variables in the context of sustainable finance and managerial accounting for a profitable and sustainable future for businesses.

Through an extensive review of the literature and careful analysis of the contributions from various scholars the construction of the first three hypotheses (H1, H2, and H3) was facilitated. The insights derived from these works provided the foundation for the development of the fourth hypothesis (H4), which emphasizes the direct and positive impact of the analytical triad (vsCHA, COA, and CIA) on the sustainability of the firm. By synthesizing these diverse perspectives, a comprehensive framework was developed that underscores the significant role of the analytical triad in promoting long-term corporate sustainability.

Hypothesis 4 (H4) The interaction between vsCHA, COA, and CIA has a direct, positive effect on firm sustainability.

Figure 1: Analytical Triad Framework (vsCHA, COA, and CIA)



Source: Prepared by the author

Figure 1 illustrates the structure of the analytical triad, which includes the factors vsCHA (Value and Supply Chain Analysis), COA (Cost Analysis), and CIA (Continuous Improvement Analysis). This framework helps to better understand the complex interactions of these three analyses (vsCHA, COA, and CIA) in relation to sustainable finance and management accounting for firm sustainability. The purpose of hypothesis 1 (H1) is to highlight the complex relationship between (vsCHA) and (COA) in the context of sustainable finance and management accounting. It is expected that this complex, positive effect includes a direct effect and an indirect effect, exploring the interrelated factors that influence this relationship. Hypothesis 2 (H2) aims to explain the complex relationship between (CIA) and (COA) in the context of sustainable finance and management accounting sustainability. It is expected that this relationship includes a direct effect and a complex indirect effect, exploring the positive impact on financial sustainability. Hypothesis 3 (H3) focuses on the role of (COA) as a mediator in the relationship between (CIA) and (vsCHA) variables. This hypothesis suggests that the

effect of continuous improvement analysis on value and supply chain variables will be mediated by the effect of cost analysis. Hypothesis 4 (H4) The interaction between vsCHA, COA, and CIA has a direct, positive effect on firm sustainability. This conceptual model, through the construction of hypotheses, serves to understand in depth the complex relationships of the analytical triad (vsCHA, COA, and CIA) in the business context, preparing the ground for sustainable strategies and achieving profitability and a sustainable future.

3. Methodology

3.1 The purpose of the paper

This paper examines sustainable finance and management accounting through the analytical triad of vsCHA (Value and Supply Chain Analysis), COA (Cost Analysis), and CIA (Continuous Improvement Analysis). It aims to provide insights for companies to achieve a profitable and sustainable future by exploring the interactions within this triad and their direct, positive effect on firm sustainability. By uncovering these complex relationships, the study highlights how businesses can develop sustainable strategies and practices, improve financial performance, and ensure long-term sustainability, effectively addressing the challenges of a dynamic business environment and the increasing demand for sustainability.

3.2 Data Collection

Data were collected through a combination of an online questionnaire using a Likert scale (ranging from 1 for strongly disagree to 5 for strongly agree) and face-to-face interviews conducted with owners (32.2%), directors (21.2%), financial managers (13.5%), managers (13.0%), internal auditors (13.0%), internal auditors (13.0%), and internal employees (9%). (4.8%) from 208 companies in Kosovo between 2021 and 2023. Participants were initially informed that the data was for research purposes only and would be kept confidential. With this assurance, they willingly participated and provided valuable insights into the intricacies of the analytical triad (vsCHA, COA, and CIA).

Table 1: Description and Definition of Study Variables

Value SupplyChain Analysis (vsCHA)		
Items	Constructs	Source
vsCHA1	Chain analysis helps the company identify emerging market trends and consumer preferences.	Shamsuddoha (2015)
vsCHA2	Chain analysis enables the company to adapt its supply chain to meet changing customer demands.	Raza et al. (2023)
vsCHA3	Chain analysis helps the company identify and exploit new market opportunities.	Lulaj et al. (2025)
vsCHA4	Chain analysis helps the company optimize its product development and innovation processes to stay ahead of industry trends.	Samaranayake et al. (2024)
vsCHA5	Chain analysis helps the company establish strategic partnerships and collaborations to capitalize on market trends.	Lulaj (2025)
vsCHA6	Chain analysis helps the company streamline its inventory management processes to reduce costs and improve profitability.	Mienczyk et al. (2012)
vsCHA7	Chain analyses help the company identify bottlenecks or inefficiencies in its supply chain and implement corrective actions.	Sharma et al. (2024)

Value SupplyChain Analysis (vsCHA)

Items	Constructs	Source
vsCHA8	Chain analysis helps the company implement sustainable and environmentally friendly practices throughout its value chain.	
vsCHA9	Chain analysis enables the company to optimize pricing strategies and increase profitability.	
vsCHA10	Chain analysis help the company monitor and manage risks associated with its supply chain, to ensure business continuity and profitability.	

Cost Analysis (COA)

COA1	Cost analysis helps assess the value of different customer segments	Moskvina et al. (2024)
COA2	Cost analysis identifies cost variances from budgeted costs	
COA3	Cost analysis helps determine the feasibility of developing a new product or service	Lulaj & Minguez-Vera (2024)
COA4	Cost analysis helps identify opportunities to improve production or service processes and minimize operational losses	
COA5	Cost analysis helps determine the optimal pricing strategy for a company's products or services.	Lulaj et al. (2024a)
COA6	Cost analysis helps to identify cost saving opportunities and optimize cost efficiency within the company's operations	Holma (2014)
COA7	Cost analysis helps to assess the financial impact of various strategic decisions or scenarios on the profitability of the company.	

Continuous Improvement Analysis (CIA)

CIA1	Continuous Improvement Analysis Helps the Company Maintain a Competitive Edge	Sakib et al. (2025)
CIA2	Continuous improvement analysis helps the company increase sales	
CIA3	Continuous improvement analysis helps the company achieve its strategic goals	Nilsson-Witell et al. (2005)
CIA4	Continuous improvement analysis helps the company reduce losses	
CIA5	Continuous improvement analysis helps the company reduce production time	Oprime et al. (2012)
CIA6	Continuous improvement analysis helps the company improve the quality of its products	Lulaj et al. (2024c)
CIA7	Continuous improvement analysis helps the company develop the best ways to achieve its goals	
CIA8	Continuous improvement analysis helps the company reduce production and control costs	Uriona Maldonado et al. (2020)
CIA9	Continuous improvement analysis helps the company increase customer value	
CIA10	Continuous improvement analysis provides the company with complete and relevant information	Wankhede & Agrawal (2025)
CIA11	Continuous improvement analysis helps the company better plan for the future	
CIA12	Continuous improvement analysis supports the company's decision-making process	
CIA13	Continuous improvement analysis helps the company evaluate employee performance	
CIA14	Continuous improvement analysis helps the company differentiate its unique products	

Value SupplyChain Analysis (vsCHA)

Items	Constructs	Source
CIA15	Continuous improvement analysis helps the company achieve cost leadership	
CIA16	Continuous improvement analysis enables the company to focus on the quality of its products	

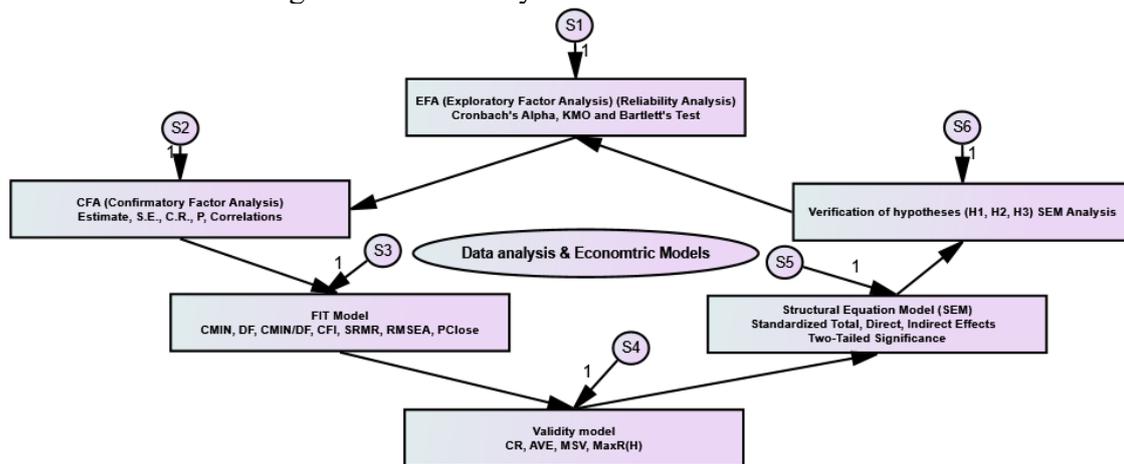
Source: Prepared by the author

Table 1 provides a detailed description of the study variables related to sustainable finance and managerial accounting, organized within the analytical triad for promoting a profitable and sustainable future for businesses. The study focuses on three key analyses, drawn from existing literature by various authors: Value Supply Chain Analysis (vsCHA), Cost Analysis (COA), and Continuous Improvement Analysis (CIA). The vsCHA factor consists of ten variables (vsCHA1–vsCHA10), the COA factor includes seven variables (COA1–COA7), and the CIA factor encompasses sixteen variables (CIA1–CIA16). These analyses and their variables offer valuable insights into their role in optimizing financial sustainability and enhancing managerial accounting practices.

3.3 Data analysis

The data were analyzed through analyses adapted to this research, such as exploratory factorial analysis (EFA), reliability analysis (Cronbach's Alpha), confirmatory factorial analysis (CFA), as well as structural equation modeling (SEM) using SPSS (64 bit) software and AMOS (26.0), related to sustainable finance and managerial accounting in the center of attention through the analytical triad for a profitable and sustainable future for businesses among the factors: value supply Chain Analysis (vsCHA1-10), Cost Analysis (COA1-7), Continuous Improvement Analysis (CIA1-16). In each analysis, tests were used to emphasize the importance of the model and to verify the hypotheses raised. The detailed elaboration was done through the following figure:

Figure 2: Data Analysis & Econometric Models



Source: Prepared by the author

Figure 2 illustrates the step-by-step progression (S1-S6) of the tests and analyses conducted for the factors (vsCHA, COA, and CIA). Following the insights of Hooper et al. (2008), the SEM analysis employs tests such as Root Mean Square Error of Approximation (RMSEA) and Standardized Root Mean Square Residual (SRMSR). Additionally, as suggested by Bentler (1990), tests including (CFI) and (TLI) are

employed to ensure the model's reliability and validate the hypotheses. The results are intended to provide practical recommendations for companies seeking a profitable and sustainable future.

4. Results

The study meticulously examined key factors, including value supply chain analysis (VSA), cost analysis (COA), and continuous improvement analysis (CIA), in relation to the spotlight on sustainable finance and managerial accounting through the analytical triad for a profitable and sustainable future for businesses as outlined in the literature review and detailed in the methodology. Rigorous hypothesis testing followed through various analyses such as exploratory factor analysis (EFA), reliability analysis using Cronbach's alpha, confirmatory factor analysis (CFA), and structural equation modeling (SEM). In addition, descriptive analysis and a correlation matrix were conducted to gain a deeper understanding of the relationships among the variables and to uncover patterns within the data. The results of these analyses are presented in the subsections and tables below to ensure a robust and comprehensive assessment of the proposed hypotheses.

Table 2: Respondent Demographics and Business Information

Category	Subcategory	Frequency	Percent
Company Type	Manufacturer	90	43.3
	Service	61	29.3
	Commercial	57	27.4
	Total	208	100.0
Position	Owner	67	32.2
	Director	44	21.2
	Financial Manager	28	13.5
	Accountant	19	9.1
	Manager	27	13.0
	Internal Auditor	10	4.8
	Employee	13	6.3
Total	208	100.0	
Legal Form	Sole Proprietorship	82	39.4
	Partnership	75	36.1
	Corporation	51	24.5
	Total	208	100.0
Education Level	High School	37	17.8
	Faculty-Bachelor's Degree	107	51.4
	Postgraduate Studies - Master's	64	30.8
	Total	208	100.0
Annual Business Revenue	0-50,000 euros	54	26.0
	50,001-300,000 euros	88	42.3
	Over 300,000 euros	66	31.7
	Total	208	100.0
Gender	Male	124	59.6
	Female	73	35.1
	Prefer not to answer	11	5.3
	Total	208	100.0

Category	Subcategory	Frequency	Percent
Age	18-35 years old	60	28.8
	36-50 years old	92	44.2
	Over 50 years old	56	26.9
Total		208	100.0

Note: Data are based on survey responses (N=208 companies). CT (Company Type), P (Position), LF (Legal Form), EL (Education Level), ABR (Annual Business Revenue), G (Gender), A (Age)

Source: Author’s calculations based on survey data.

Table 2 provides an overview of the main demographic and business characteristics of the respondents. The variable company type (CT) shows that the majority of companies (43.3%) are manufacturers, followed by service companies (29.3%) and commercial companies (27.4%). Regarding the position (P) within the companies, the largest group is made up of owners (32.2%), followed by directors (21.2%), financial managers (13.5%), managers (13.0%), accountants (9.1%), employees (6.3%), and internal auditors (4.8%). The legal form (LF) of businesses shows that sole proprietorships are the most common (39.4%), while partnerships account for 36.1% and corporations for 24.5% of the sample. In terms of educational level (EL), the majority of respondents have a bachelor's degree (51.4%), followed by a master's degree (30.8%), while 17.8% have a high school diploma as their highest level of education. The distribution of annual business revenues (ABR) shows that 42.3% of the businesses generate revenues of €50,001-300,000 per year, 31.7% report revenues above €300,000, and 26.0% fall in the range of 0-€50,000. Regarding gender (G), the majority of respondents are male (59.6%), while 35.1% are female and 5.3% prefer not to disclose their gender. Finally, the age distribution (A) shows that 44.2% of respondents are between 36 and 50 years old, followed by 18-35 years old (28.8%) and over 50 years old (26.9%).

Table 3 shows the results of the correlation analysis, which provides valuable insights into the relationships between the various items and offers an in-depth view of how each factor is interrelated in the context of sustainable finance and managerial accounting. The analysis highlights key correlations that are essential to understanding the role of each variable and factor in driving a profitable and sustainable future for companies. Company type (CT) shows moderate correlations with P ($r = 0.184, p < 0.01$) and LF ($r = 0.185, p < 0.01$), indicating a potential relationship between company type and both organizational hierarchy and legal structure. However, the correlation is weaker with other factors such as ABR ($r = 0.153, p < 0.05$) and EL ($r = 0.225, p < 0.01$), suggesting a less pronounced influence on financial and educational variables. This could mean that the type of firm influences certain structural and operational aspects but has a limited impact on broader business outcomes. Position (P) shows strong positive correlations with ABR ($r = 0.440, p < 0.01$) and EL ($r = 0.417, p < 0.01$), highlighting that higher positions within the firm are closely associated with greater firm revenues and educational attainment. These results underscore the importance of managerial roles in shaping financial outcomes and the role of educational background in influencing business success, particularly in sustainable finance. Legal Form (LF) has significant correlations with ABR ($r = 0.275, p < 0.01$) and EL ($r = 0.345, p < 0.01$), suggesting that firms with certain legal structures may have greater potential for revenue growth and value creation. However, the relationship with other variables, such as (A and G), remains relatively weak, suggesting that while legal form is important for revenue, its impact on other demographic factors is minimal. Annual Business Revenue (ABR) is significantly

Table 3: Correlation Matrix of Study Variables on Sustainable Finance and Managerial Accounting

Items	Mean	SD	Correlations														
			CT	P	LF	A	G	ABR	EL	vsCHA	COA	CIA					
CT	1.84	.83	1														
P	2.89	1.88	.18**	1													
LF	1.89	.86	.19**	.28**	1												
A	1.98	.75	.19**	.11	.03	1											
G	1.46	.60	.09	.09	.08	-.08	1										
ABR	2.06	.76	.15*	.44**	.28**	.08	-.01	1									
EL	2.21	.77	.23**	.42**	.35**	.14*	.14*	.51**	1								
vsCHA	3.69	.83	.06	.06	.02	-.04	.00	.17*	.09	1							
COA	3.63	.88	.12	-.02	.05	-.01	.02	.20**	.06	.72**	1						
CIA	3.71	.76	.07	-.04	-.00	-.02	-.06	.19**	.07	.76**	.80**	1					

Note: Table 3 presents the correlation coefficients for various study variables based on survey responses from 208 companies. The variables include Company Type (CT), Position (P), Legal Form (LF), Age (A), Gender (G), Annual Business Revenue (ABR), Education Level (EL), Value Supply Chain Analysis (vsCHA), Cost Analysis (COA), and Continuous Improvement Analysis (CIA). Statistical significance is indicated with asterisks: $p < 0.05$ for correlations marked with * and $p < 0.01$ for those marked with **.

Source: Author's calculations based on survey data.

correlated with P ($r=0.440$, $p < 0.01$), EL ($r=0.506$, $p < 0.01$), and CIA factor ($r=0.204$, $p < 0.01$), suggesting that companies with higher revenues are more likely to have a highly educated workforce and are more likely to adopt continuous improvement strategies, which are critical for long-term business sustainability.

Education Level (EL) shows significant positive correlations with P ($r = 0.417$, $p < 0.01$), ABR ($r = 0.506$, $p < 0.01$), and COA factor ($r = 0.204$, $p < 0.01$), underscoring the critical role education plays in shaping higher management positions, influencing revenue generation, and improving financial decision-making processes. When focusing on the factors related to sustainable finance and managerial accounting - value chain analysis (vsCHA factor), cost analysis (COA factor), and continuous improvement analysis (CIA factor) - the results show strong correlations. The vsCHA factor is positively correlated with the COA factor ($r = 0.721$, $p < 0.01$) and the CIA factor ($r = 0.762$, $p < 0.01$), suggesting that these factors are highly interrelated and work together to optimize sustainability in business operations. This reinforces the idea that a well-managed value chain is key to achieving both cost efficiencies and continuous improvements that contribute to long-term business profitability and sustainability. COA also shows a strong positive correlation with the CIA factor ($r = 0.804$, $p < 0.01$), further emphasizing that cost analysis and continuous improvement are complementary, and companies that excel in one are more likely to excel in the other, driving improvements in both financial performance and operational efficiency.

In conclusion, the analysis of the correlations between the various variables highlights significant relationships that contribute to understanding how sustainable finance and managerial accounting practices—through the analytical triad of vsCHA, COA, and CIA affect business sustainability. These findings suggest that a holistic approach to these analyses, along with attention to organizational and demographic variables, is crucial for enhancing financial sustainability and optimizing managerial practices in businesses.

4.1.EFA (Exploratory Factor Analysis) and Cronbach's Alpha (Reliability Analysis)

In this section, an in-depth exploration unfolded as the variables associated with each factor (vsCHA, COA, CIA) were scrutinized. The analytical approach included exploratory factor analysis using KMO and Bartlett's test, as well as reliability analysis measured by Cronbach's alpha. The intention was to provide a careful examination of the factors and to establish the reliability of the variables involved in the study.

Table 4: Pattern Matrix

KMO =.971 Sig.=.000	Pattern Matrix		
	vsCHA	COA	CIA
vsCHA1	.857	...	...
vsCHA2	.840	...	...
vsCHA3	.829	...	...
vsCHA4	.823	...	...
vsCHA5	.816	...	...
vsCHA6	.816	...	...
vsCHA7	.815	...	...
vsCHA8	.813	...	...
vsCHA9	.805	...	...
vsCHA10	.795	...	...
COA 1	...	.861	...
COA2	...	.861	...
COA3	...	.828	...

Pattern Matrix				
KMO =.971 Sig.=.000	Factor			
	vsCHA	COA	CIA	
COA4811	...	
COA5809	...	
COA6800	...	
COA7779	...	
CIA1829	
CIA2822	
CIA3808	
CIA4808	
CIA5807	
CIA6796	
CIA7794	
CIA8791	
CIA9790	
CIA10788	
CIA11787	
CIA12781	
CIA13780	
CIA14812	
CIA15794	
CIA16726	

Source: Author’s calculations based on survey data.

Table 4 presents the Pattern Matrix according to (EFA), where it is emphasized the creation of three factors vsCHA (valuesupply Chain Analysis), COA (Cost Analysis), and CIA (Continuous Improvement Analysis), and their sub-factors (vsCHA1-10, COA1-7, and CIA1-16) related to spotlight on sustainable finance and managerial accounting through the analytical triad for a profitable and sustainable future for businesses. All the sub-factors of the factors are of great importance, as their value is above 0.50. According to the KMO test for all three factors, it is emphasized that the data have a perfect fit with the model since its value is above 0.90 (0.971>0.90).

Table 5: EFA and Cronbach's Alpha

EFA & Cronbach's Alpha				
KMO and Bartlett's Test		vsCHA	COA	CIA
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.938	.922	.959
Bartlett's Test of Sphericity	Approx. Chi-Square	3339.430	2014.677	5394.486
	df	45	21	120
	Sig.	.000	.000	.000
Cronbach's Alpha		.953	.935	.964

Source: Author’s calculations based on survey data.

Table 5 shows the results of the exploratory factorial analysis (EFA) and Cronbach's alphas for the analytical triad (vsCHA, COA, and CIA). The EFA, as assessed by the Kaiser-Meyer-Olkin (KMO) test, yielded the following results for each factor: vsCHA (.938 ≈ 94%), COA (.922 ≈ 92%), and CIA (.959 ≈ 96%), all of which exceeded 0.90. This underscores that the data were appropriately adjusted for the analytical triad model. In addition, Bartlett's sphericity test indicates the significance of the data for all three factors (Sig.=0.000), indicating a high correlation between the variables. Furthermore, the reliability analysis using Cronbach's Alpha highlights the high level of

reliability of the measures used (vsCHA, COA and CIA) within the model (vsCHA, $.95 \geq \alpha \leq .0.80$; COA, $.94 \geq \alpha \leq .0.80$; CIA, $.96 \geq \alpha \leq .0.80$), with alpha values exceeding 0.80.

4.2.CFA (Confirmatory Factor Analysis)

In this section, confirmatory factor analysis (CFA) was used to examine the variables associated with each factor (vsCHA, COA, and CIA), with the following results.

Table 6: CFA

Paths				Estimate	S.E.	C.R.	P	Estimate
Valuesupply Chain Analysis (vsCHA)	vsCHA1	<---	vsCHA	1.000				.847
	vsCHA2	<---	vsCHA	.895	.047	19.028	***	.792
	vsCHA3	<---	vsCHA	.962	.048	19.943	***	.815
	vsCHA4	<---	vsCHA	.965	.048	19.902	***	.814
	vsCHA5	<---	vsCHA	.974	.050	19.489	***	.803
	vsCHA6	<---	vsCHA	1.039	.052	19.929	***	.814
	vsCHA7	<---	vsCHA	1.040	.051	20.347	***	.825
	vsCHA8	<---	vsCHA	1.069	.051	21.078	***	.842
	vsCHA9	<---	vsCHA	1.008	.049	20.764	***	.834
	vsCHA10	<---	vsCHA	1.175	.058	20.264	***	.823
Cost Analysis (COA)	COA1	<---	COA	1.000				.821
	COA2	<---	COA	.834	.043	19.355	***	.828
	COA3	<---	COA	.936	.046	20.399	***	.857
	COA4	<---	COA	.811	.043	18.655	***	.808
	COA5	<---	COA	.922	.046	20.060	***	.848
	COA6	<---	COA	.795	.043	18.278	***	.797
	COA7	<---	COA	.807	.044	18.153	***	.794
Continuous Improvement Analysis (CIA)	CIA1	<---	CIA	1.000				.822
	CIA2	<---	CIA	.851	.044	19.130	***	.814
	CIA3	<---	CIA	.939	.048	19.650	***	.828
	CIA4	<---	CIA	.829	.047	17.777	***	.774
	CIA5	<---	CIA	.896	.048	18.605	***	.799
	CIA6	<---	CIA	.843	.046	18.292	***	.790
	CIA7	<---	CIA	.910	.046	19.953	***	.836
	CIA8	<---	CIA	.872	.049	17.894	***	.778
	CIA9	<---	CIA	.868	.048	18.157	***	.786
	CIA10	<---	CIA	.832	.046	17.979	***	.781
	CIA11	<---	CIA	.879	.047	18.726	***	.802
	CIA12	<---	CIA	.824	.046	18.013	***	.782
	CIA13	<---	CIA	.875	.048	18.310	***	.790
	CIA14	<---	CIA	.842	.047	17.772	***	.774
	CIA15	<---	CIA	.840	.049	17.029	***	.751
	CIA16	<---	CIA	.828	.049	16.816	***	.745
Correlations								
vsCHA<-->COA				.846				
vsCHA<-->CIA				.852				
COA<-->CIA				.886				

Source: Author’s calculations based on survey data.

Table 6 presents the results of confirmatory factor analysis (CFA) related to the spotlight on sustainable finance and managerial accounting through the analytical triad for a profitable and sustainable future for businesses among the factors: value supply chain analysis (vsCHA1-10), cost analysis (COA1-7), and continuous improvement

analysis (CIA1-16). Based on the results of these analyses for the three factors (vsCHA, COA, and CIA), it is emphasized that there is an important and significant relationship between the factor (vsCHA) with its variables (vsCHA1, vsCHA2, vsCHA3, vsCHA4, vsCHA5, vsCHA6, vsCHA7, vsCHA8, vsCHA9, and vsCHA10) and vice versa, for factor (COA) with its variables (COA1, COA2, COA3, COA4, COA5, COA6, and COA7) and vice versa, as well as for factor (CIA) with its variables (CIA1, CIA2, CIA3, CIA4, CIA5, CIA6, CIA7, CIA8, CIA9, CIA10, CIA11, CIA12, CIA13, CIA14, CIA15 and CIA16) and vice versa. According to the estimate, it is highlighted that all factor variables (vsCHA, COA, and CIA) are statistically significant, each having a value above 0.5. Specifically, within the vsCHA factor, the variables vsCHA1 (.847) and vsCHA8 (.842) are identified as the most important. These variables contribute significantly to the company's ability to identify emerging market trends, understand consumer preferences, and successfully implement sustainable and environmentally friendly practices throughout its entire value chain. In the context of the (COA) factor, special significance is attributed to variables COA3 (.857) and COA5 (.848). These variables, indicative of the role of COA, are crucial in assessing the feasibility of introducing new products or services and in determining the optimal pricing strategy for the company's products or services. In the (CIA) factor, the variables CIA7 (.836) and CIA3 (.828) hold great significance. These variables, indicative of the role of the CIA, help the company to develop optimal strategies to achieve its goals and contribute to the achievement of its strategic objectives. According to the correlation analysis, it is emphasized that the vsCHA factor has a high and strong correlation with the COA factor (vsCHA<-->COA) in the value of ($r=.846 \approx 85\%$), the vsCHA factor has a high and strong relationship with the CIA factor (vsCHA<-->CIA) in the value of ($r=.852 \approx 85\%$), and the COA factor has a high and strong relationship with the CIA factor (COA<-->CIA) in the value of ($r=.886 \approx 89\%$).

Table 7 shows the results of the model fit for the factors (vsCHA, COA, and CIA). Based on the tests performed, the results are as follows: CMIN/DF ($p=2.099 \approx 2.1$), RMR ($p=.044 \approx 0.4$), GFI ($p=.875 \approx 88\%$), AGFI ($p=.841 \approx 84\%$), NFI ($p=.926 \approx 93\%$), RFI ($p=.912 \approx 91\%$), IFI ($p=.960 \approx 96\%$), TLI ($p=.952 \approx 95\%$), CFI ($0.960 \geq 0.95$), PClose ($0.084 \geq 0.05$), and RMSEA ($0.054 \leq 0.06$). These values indicate excellent model fit. In addition, the PGFI ($p=.696$), LO 90 (.041), and HI 90 (.056) tests provide information about the degrees of freedom and the confidence interval for the lower and upper bounds of the (vsCHA, COA, and CIA) factors. Overall, the interpretation of the model fit based on all tests emphasizes the significance and accuracy of the data related to the (vsCHA, COA, and CIA) factors, their factors (vsCHA1-10, COA1-7, and CIA1-16), and the subfactors within each other.

Figure 3 shows the relationship between the three key factors - value chain analysis (vsCHA), cost analysis (COA), and continuous improvement analysis (CIA) - and their respective variables (vsCHA1-10, COA1-7, CIA1-16). The goal is to show how these factors collectively contribute to the overarching goal of sustainable finance and management accounting for companies seeking a profitable and sustainable future.

From the figure, a strong, positive, and statistically significant relationship is observed between vsCHA and CIA, with a correlation coefficient of $r = 0.89$. This result indicates that improvements in supply chain value chain processes directly support continuous improvement efforts. The strong positive relationship between these two factors suggests that companies that prioritize value chain efficiency are likely to experience improved process optimization and strategic goal achievement. As companies refine their supply chains, they are better positioned to achieve long-term sustainability and profitability.

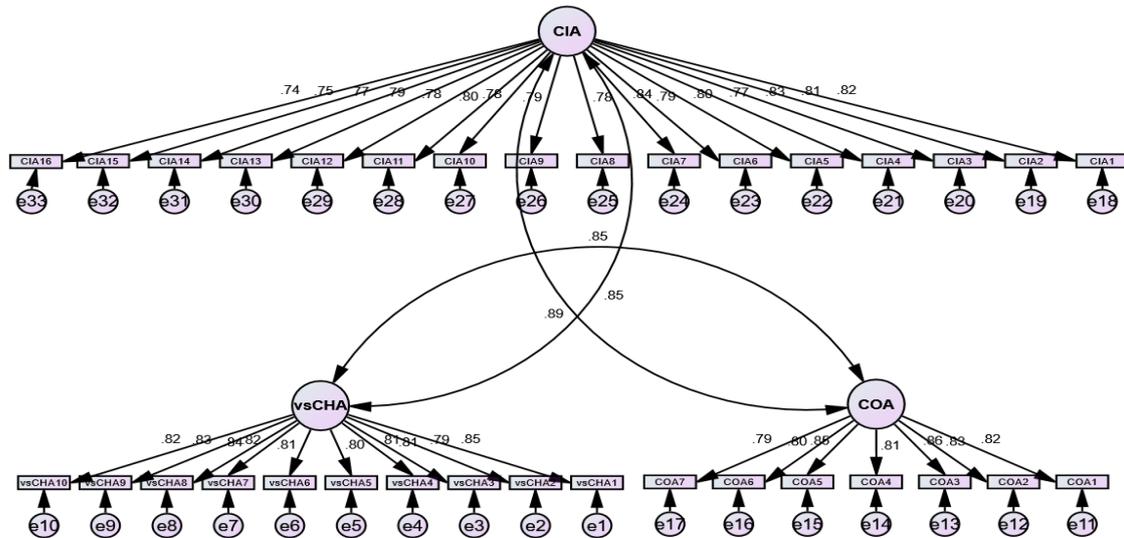
Table 7: Fit Model

Model Fit Summary													
CMIN	RMR, GFI			Measure	Estimate	Threshold	Interpretation						
Model	NPAR	CMIN	DF	P	CMIN/DF	RMR	GFI	AGFI	PGFI	CMIN	Estimate	Threshold	Interpretation
Default model	120	925.876	441	.000	2.099	.044	.875	.841	.688	DF	441	--	--
										CMIN/DF	2.099	Between 1 and 3	Excellent
Baseline Comparisons													
Model	NFI	RFI	IFI	TLI	CFI	RMSEA	LO 90	HI 90	PCLOSE	CFI	Estimate	Threshold	Interpretation
Default model	.926	.912	.960	.952	.960	.054	.049	.059	.084	.960	0.987	>0.95	Excellent
	Delta1	rho1	Delta2	rho2						SRMR	0.032	<0.08	Excellent
										RMSEA	0.054	<0.06	Excellent
										PClose	0.084	>0.05	Excellent

Note: CMIN/DF (Chi-square Minimum/ Degrees of Freedom Ratio), RMR (Root Mean Square Residual), GFI (Goodness of Fit Index), AGFI (Adjusted Goodness of Fit Index), NFI (Normed Fit Index), RFI (Relative Fit Index), IFI (Incremental Fit Index), TLI (Tucker-Lewis Index), CFI (Comparative Fit Index), PClose (P-value for Close Fit), RMSEA (Root Mean Square Error of Approximation), PGFI (Parsimony Goodness of Fit Index), LO 90 (Lower Bound of the 90% Confidence Interval for RMSEA), HI 90 (Upper Bound of the 90% Confidence Interval for RMSEA).

Source: Author's calculations based on survey data.

Figure 3: CFA model



Source: Author’s calculations based on survey data.

Furthermore, the figure shows a significant positive correlation between vsCHA and COA, with a correlation coefficient of $r = 0.85$. This correlation underscores the essential link between effective value chain management and cost management. Companies that invest in understanding and optimizing their value chains are more likely to see cost efficiencies and improved financial sustainability. The analysis of value chains not only facilitates the identification of cost-saving opportunities but also contributes to the overall financial resilience of the business. In other words, improving value chain operations allows businesses to reduce operational costs while simultaneously enhancing the value they provide to customers and stakeholders.

Finally, the relationship between COA and CIA, with a correlation coefficient of $r = 0.85$, demonstrates that cost management and continuous improvement efforts go hand in hand. This strong relationship implies that companies that focus on rigorous cost analysis are better equipped to continuously improve their processes, thereby increasing operational efficiency and long-term performance. By managing costs effectively, companies can foster innovation, improve product quality, and ensure the sustainability of their operations. This creates a strong competitive advantage and helps mitigate the risks associated with operational inefficiencies and financial instability.

In summary, Figure 3 emphasizes the interconnectedness of the factors in the analytical triad. Each factor (vsCHA, COA, and CIA) plays a critical role in achieving sustainable financial and managerial accounting practices because together they drive the efficiency, cost management, and value creation that are essential for a profitable and sustainable future.

4.3. Structural Equation Model (SEM)

This section presents the results of the Structural Equation Model (SEM) for the three key factors—vsCHA (value supply chain analysis), COA (cost analysis), and CIA (continuous improvement analysis). The model provides insights into the relationships and effects among these factors, which are central to ensuring business sustainability and profitability. The following table outlines the standardized total, direct, and indirect effects of these factors.

Table 8: Standardized Total, Direct and Indirect Effects

Items/Path	Standardized Total Effects			Standardized Direct Effects			Standardized Indirect Effects		
	CIA	vsCHA	COA	CIA	vsCHA	COA	CIA	vsCHA	COA
vsCHA	.852	.000	.000	.852	.000	.000	.000	.000	.000
COA	.886	.334	.000	.601	.334	.000	.285	.000	.000
CIA16	.745	.000	.000	.745	.000	.000	.000	.000	.000
CIA15	.751	.000	.000	.751	.000	.000	.000	.000	.000
CIA14	.774	.000	.000	.774	.000	.000	.000	.000	.000
CIA13	.790	.000	.000	.790	.000	.000	.000	.000	.000
CIA12	.782	.000	.000	.782	.000	.000	.000	.000	.000
CIA11	.802	.000	.000	.802	.000	.000	.000	.000	.000
CIA10	.781	.000	.000	.781	.000	.000	.000	.000	.000
CIA9	.786	.000	.000	.786	.000	.000	.000	.000	.000
CIA8	.778	.000	.000	.778	.000	.000	.000	.000	.000
CIA7	.836	.000	.000	.836	.000	.000	.000	.000	.000
CIA6	.790	.000	.000	.790	.000	.000	.000	.000	.000
CIA5	.799	.000	.000	.799	.000	.000	.000	.000	.000
CIA4	.774	.000	.000	.774	.000	.000	.000	.000	.000
CIA3	.828	.000	.000	.828	.000	.000	.000	.000	.000
CIA2	.814	.000	.000	.814	.000	.000	.000	.000	.000
CIA1	.822	.000	.000	.822	.000	.000	.000	.000	.000
vsCHA1	.722	.847	.000	.000	.847	.000	.722	.000	.000
vsCHA2	.675	.792	.000	.000	.792	.000	.675	.000	.000
vsCHA3	.694	.815	.000	.000	.815	.000	.694	.000	.000
vsCHA4	.694	.814	.000	.000	.814	.000	.694	.000	.000
vsCHA5	.685	.803	.000	.000	.803	.000	.685	.000	.000
vsCHA6	.694	.814	.000	.000	.814	.000	.694	.000	.000
vsCHA7	.703	.825	.000	.000	.825	.000	.703	.000	.000
vsCHA8	.718	.842	.000	.000	.842	.000	.718	.000	.000
vsCHA9	.711	.834	.000	.000	.834	.000	.711	.000	.000
vsCHA10	.701	.823	.000	.000	.823	.000	.701	.000	.000
COA7	.703	.265	.794	.000	.000	.794	.703	.265	.000
COA6	.706	.267	.797	.000	.000	.797	.706	.267	.000
COA5	.751	.283	.848	.000	.000	.848	.751	.283	.000
COA4	.716	.270	.808	.000	.000	.808	.716	.270	.000
COA3	.759	.286	.857	.000	.000	.857	.759	.286	.000
COA2	.734	.277	.828	.000	.000	.828	.734	.277	.000
COA1	.727	.275	.821	.000	.000	.821	.727	.275	.000

Note: Statistical significance: Correlations marked with * are significant at the $p < 0.05$ level.

Factor definitions: CIA (Continuous Improvement Analysis), vsCHA (Value and Supply Chain Analysis), COA (Cost Analysis).

Source: Author's calculations based on survey data.

Table 8 presents a comprehensive analysis of the relationships between CIA (Continuous Improvement Analysis), vsCHA (Value Supply Chain Analysis), and COA (Cost Analysis), shedding light on their direct, total, and indirect effects on each other and on their respective variables.

The CIA factor plays a key role in influencing both vsCHA and COA. Specifically, CIA has a strong direct effect of 85% on vsCHA and 60% on COA, underscoring its central position in shaping the company's operational framework and

cost structure. In addition to these direct effects, CIA also exerts significant total effects on the variables within both vsCHA and COA, highlighting the broad influence of continuous improvement efforts across multiple areas of the business. This underscores that a focus on CIA leads to improvements that cascade through various operational dimensions.

On the other hand, vsCHA shows considerable direct effects on its own variables, with values ranging from 79% to 85%. However, its effect on COA is more indirect. The total effect of vsCHA on COA is approximately 33%, suggesting that while vsCHA has an impact on cost analysis, its influence is primarily mediated through the CIA factor. In other words, the full impact of value chain analysis on cost management is realized when supported by continuous improvement initiatives rather than through a direct influence. The COA factor shows significant direct effects on its own variables, with values ranging from 79% to 85%. These direct effects highlight the critical role of cost analysis in achieving operational efficiency. However, COA does not show significant indirect effects on either CIA or vsCHA, indicating that its scope is more limited to cost management. COA's primary function is to optimize internal cost-related processes, and it does not significantly influence broader business areas outside its direct scope. In terms of indirect effects, CIA plays a critical role in influencing both vsCHA and COA. The CIA factor has an indirect effect on COA (29%), further emphasizing its importance in improving cost management, even though the relationship is not direct. Similarly, CIA also influences the variables within vsCHA, demonstrating the broader systemic impact of continuous improvement practices on the entire operational framework.

The results suggest that CIA is the most influential of the three factors, directly and indirectly shaping the other factors and their variables. The direct impact of CIA on both vsCHA (85%) and COA (60%) underscores its fundamental role in driving business strategy and operational success. Meanwhile, while vsCHA has a significant impact on its own variables, its influence on COA is largely mediated by CIA, suggesting that improvements in value chain analysis are most effective when supported by continuous improvement practices. COA, while essential for optimizing cost-related processes, has a more focused role with limited cross-influence on other factors.

In summary, the SEM results underscore the importance of continuous improvement as a driver of business performance. Organizations that prioritize CIA are likely to see significant benefits not only in their value chain but also in their cost management processes. While improvements in VsCHA are valuable, they are most impactful when supported by continuous improvement initiatives. Similarly, the internal focus of COA suggests that while it is critical to cost efficiency, its influence is limited to cost-related activities. These findings highlight the need for an integrated approach that prioritizes continuous improvement to promote sustainable practices and long-term business profitability.

Table 9: Standardized Total, Direct, and Indirect Effects - Two Tailed Significance

Item	Two Tailed Significance								
	Standardized Total Effects			Standardized Direct Effects			Standardized Indirect Effects		
	CIA	vsCHA	COA	CIA	vsCHA	COA	CIA	vsCHA	COA
vsCHA	.010	...	...	.010	...	...	...	...	...
COA	.010	.016	...	.010	.016	...	.016	...	...
CIA16	.010	...	...	.010	...	...	...	...	...
CIA15	.010	...	...	.010	...	...	...	...	...
CIA14	.010	...	...	.010	...	...	...	...	...
CIA13	.010	...	...	.010	...	...	...	...	...

Item	Two Tailed Significance								
	Standardized Total Effects			Standardized Direct Effects			Standardized Indirect Effects		
	CIA	vsCHA	COA	CIA	vsCHA	COA	CIA	vsCHA	COA
CIA12	.010	...	...	.010	...	...	...	...	...
CIA11	.010	...	...	.010	...	...	...	...	...
CIA10	.010	...	...	.010	...	...	...	...	...
CIA9	.010	...	...	.010	...	...	...	...	...
CIA8	.010	...	...	.010	...	...	...	...	...
CIA7	.010	...	...	.010	...	...	...	...	...
CIA6	.010	...	...	.010	...	...	...	...	...
CIA5	.010	...	...	.010	...	...	...	...	...
CIA4	.010	...	...	.010	...	...	...	...	...
CIA3	.010	...	...	.010	...	...	...	...	...
CIA2	.010	...	...	.010	...	...	...	...	...
CIA1	.010	...	...	.010	...	...	...	...	...
vsCHA1	.010	.010	...	...	.010	...	.010	...	...
vsCHA2	.010	.010	...	...	.010	...	.010	...	...
vsCHA3	.010	.010	...	...	.010	...	.010	...	...
vsCHA4	.010	.010	...	...	.010	...	.010	...	...
vsCHA5	.010	.010	...	...	.010	...	.010	...	...
vsCHA6	.010	.010	...	...	.010	...	.010	...	...
vsCHA7	.010	.010	...	...	.010	...	.010	...	...
vsCHA8	.010	.010	...	...	.010	...	.010	...	...
vsCHA9	.010	.010	...	...	.010	...	.010	...	...
vsCHA10	.010	.010	...	...	.010	...	.010	...	...
COA7	.010	.016	.010	...	...	.010	.010	.016	...
COA6	.010	.016	.010	...	...	.010	.010	.016	...
COA5	.010	.016	.010	...	...	.010	.010	.016	...
COA4	.010	.017	.010	...	...	.010	.010	.017	...
COA3	.010	.017	.010	...	...	.010	.010	.017	...
COA2	.010	.016	.010	...	...	.010	.010	.016	...
COA1	.010	.016	.010	...	...	.010	.010	.016	...

Note: Statistical Significance: Two-tailed significance marked with * indicates significance at the $p < 0.05$ level. The table displays the standardized total, direct, and indirect effects for CIA (Continuous Improvement Analysis), vsCHA (Value and Supply Chain Analysis), and COA (Cost Analysis).

Source: Author’s calculations based on survey data.

Table 9 presents the standardized total, direct, and indirect effects, including two-tailed significance at the 0.05 significance level, providing insights into the relationships between the three factors - continuous improvement analysis (CIA), value and supply chain analysis (vsCHA), and cost analysis (COA) - within the context of sustainable finance and managerial accounting.

Regarding the effect of CIA, the results show that the CIA factor significantly affects both vsCHA and COA, with direct effects observed across all variables within each of these factors. Specifically, CIA has a direct effect on all of its own variables (CIA1 to CIA16), which are statistically significant ($p=.010$ for each). In addition, CIA significantly influences both the Value Chain (vsCHA) and Cost Analysis (COA) factors, with total effects of $p=.010$ for both, indicating its central role in driving operational and cost-related improvements. Furthermore, as with the effect of vsCHA on COA, the

vsCHA factor shows a positive impact on COA, with a direct effect on all COA variables (p=.016 for each). This suggests that improving the value chain has a positive effect on cost analysis. In addition, vsCHA also has an indirect effect on the COA variables, further emphasizing the interrelationship between value and supply chain improvements and cost management.

In addition to its direct effect, CIA also has an indirect effect on COA variables (p=.010 for each). This underscores the role of continuous improvement practices not only in directly influencing cost analysis but also in improving cost management through systemic improvements within the organization. Next, as for, COA's role in mediating relationships, it is shown that COA does not directly influence vsCHA but plays a critical mediating role. The cost analysis factor indirectly affects the relationship between CIA and vsCHA, suggesting that effective cost management strategies help translate continuous improvement practices into improved value and supply chain performance. This mediation effect is statistically significant (p=.010 for each vsCHA variable), indicating that improvements in COA help facilitate the broader operational benefits that result from continuous improvement.

Overall, the results highlight the significant and interrelated roles that CIA, vsCHA, and COA play in fostering a sustainable and profitable business model. CIA emerges as the most influential factor, directly impacting both vsCHA and COA. Meanwhile, vsCHA and COA show a complex interplay where vsCHA has a direct effect on COA and COA mediates the relationship between CIA and vsCHA. The analysis underscores the importance of continuous improvement practices in driving both operational efficiency and cost optimization across the value chain.

Table 10: Verifying the Hypotheses of the Analytical Triad (vsCHA, COA, and CIA)

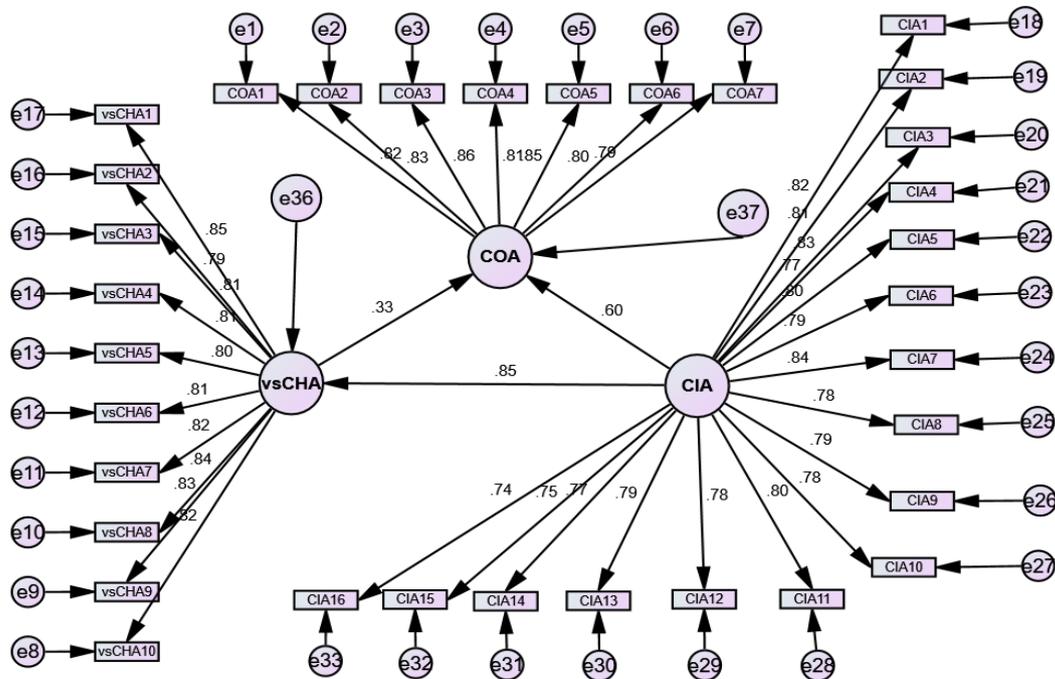
Two Tailed Significance	vsCHA	COA	CIA	Accepted/ Rejected
Paths/Relationships	vsCHA → COA (p=0.16)	CIA → COA (p=.010)	CIA → vsCHA 1-10 (p=.010)	H ₁ is accepted
Standardized Direct Effects	vsCHA ↔ vsCHA (p=.010)	↔ CIA 16-1 (p=.010)	H ₃ is accepted	H ₂ is accepted
Standardized Indirect Effects	vsCHA ↔ COA 1-7 (p=.016, .017)	CIA ↔ COA 7-1 (p=.010)		

Source: Author’s calculations based on survey data.

Table 10 shows the results of testing the hypotheses for the analytical triad (vsCHA, COA, and CIA) related to the spotlight on sustainable finance and managerial accounting for a profitable and sustainable future for business. Hypothesis 1 (H₁) aimed to understand the complex relationship between vsCHA and COA, expecting a positive effect that includes both direct and indirect factors. The results of (H₁) are presented below: value and supply chain analysis (vsCHA) significantly and directly affects cost analysis (COA) in sustainable finance and management accounting for a profitable and sustainable future in business (p=.016). Direct effects are significant for vsCHA variables (vsCHA1-10, p=.010), confirming the positive impact. The vsCFA factor also shows significant indirect effects on (COA) variables (COA7-1, p=.016-.017). Thus, H₁ is supported, indicating a complex and direct positive effect between vsCHA and COA. vsCHA helps to identify market trends, adapt the supply chain, and optimize innovation and strategic partnerships. It streamlines processes, identifies inefficiencies, and promotes sustainability practices, enabling optimal pricing strategies and risk management. Indirect effects on COA variables help assess customer value, identify cost

variances, determine product feasibility, improve processes, optimize pricing, and evaluate financial impact. Hypothesis 2 (H₂) aimed to explore the intricate relationship between CIA and COA, expecting a complex effect involving both direct and indirect factors that positively impact sustainable finance and managerial accounting. The results of H₂ indicate that continuous improvement analysis (CIA) significantly affects cost analysis (COA) in sustainable finance and management accounting for a profitable and sustainable future in businesses (p=.010). The direct effects are significant for CIA variables (CIA1-16), confirming a positive and complex relationship. CIA helps to maintain competitive advantage, increase sales, achieve strategic goals, reduce losses, improve production efficiency and product quality, and optimize costs. Indirect effects on COA variables (COA1-7) help assess customer value, identify cost variances, determine product feasibility, improve processes, optimize pricing, identify cost-saving opportunities, and assess the financial impact of strategic decisions on profitability. Hypothesis 3 (H₃) aimed to investigate the role of (COA) as a mediator between the (CIA) and (vsCHA), expecting that, despite its indirect influence on (vsCHA), the (CIA) also effects (vsCHA) through its impact on (COA). The results of H₃ indicate that cost analysis (COA) serves as a mediator, confirming the indirect and complex positive effects of continuous improvement analysis (CIA) on value supply chain analysis (vsCHA) variables in the context of sustainable finance and managerial accounting for profitability and future sustainability in business. The mediation is evident in the indirect significance of vsCHA variables (vsCHA1-10), as value supply chain analysis facilitates the company's adaptation to market trends, optimization of product development, establishment of strategic partnerships, and implementation of sustainable practices throughout the value chain, contributing to improved profitability, risk management, and business continuity.

Figure 4: SEM Model



Note: Structural Equation Modeling (SEM), Value Supply Chain Analysis (vsCHA), Continuous Improvement Analysis (CIA), Cost Analysis (COA). Significance at the $p < 0.05$ level.
 Source: Author's calculations based on survey data.

Figure 4 presents the results of the SEM analysis, which tests the proposed hypotheses concerning the analytical triad (vsCHA, COA, and CIA) and its influence on sustainable finance and managerial accounting for a profitable and sustainable future. The focus of the figure is on the significant effects of the factors on each other, which were verified through SEM and represented with p-values.

The analysis reveals positive relationships among the factors, as shown by the following p-values: vsCHA → COA (p=0.33), CIA → COA (p=0.60), and CIA → vsCHA (p=0.85). These results indicate that the analytical triad factors do not operate in isolation but rather have positive effects on each other. Specifically, vsCHA (Value Supply Chain Analysis) has a positive and direct impact on COA (Cost Analysis), as indicated by Hypothesis 1 (p=0.33). This finding suggests that understanding and improving the value supply chain directly contributes to more effective cost management, which is a critical component of sustainable finance. CIA (Continuous Improvement Analysis) has a similarly positive influence on COA, as shown by Hypothesis 2 (p=0.60). This result highlights the importance of continuous process improvement in enabling cost efficiency, which is integral to maintaining financial sustainability and profitability. Hypothesis 3 explores the mediating role of COA (Cost Analysis), indicating that CIA indirectly affects vsCHA through its impact on COA. The p-value of 0.85 suggests a strong, indirect pathway where effective cost analysis enables businesses to implement improvements in their value chains, thus enhancing overall sustainability.

These findings confirm the interplay between the factors in the analytical triad. Therefore, the results underscore that an effective combination of vsCHA, CIA, and COA is crucial for businesses that seek to achieve a sustainable and profitable future. The positive direct effects and indirect pathways identified in the SEM analysis suggest that businesses should leverage these three factors to identify market trends, optimize supply chain processes, and reduce operational costs—all of which contribute to better financial sustainability and competitive advantage.

In practical terms, businesses are encouraged to utilize vsCHA to stay ahead of market dynamics and optimize their supply chains and innovation processes. CIA should be employed to continuously improve processes, increase profitability, and maintain a competitive edge. Finally, COA is highlighted as a critical mediator, underscoring its role in connecting and amplifying the effects of both vsCHA and CIA.

Table 11: Analytical Triad (vsCHA, COA, and CIA) Direct Effect on Firm Sustainability

Paths	Estimate	S.E.	C.R.	P-Value	Standardized Estimate	Two-Tailed Significance
vsCHA → Firm Sustainability	0.216	0.032	6.712	***	0.312	*** (p < 0.001)
COA → Firm Sustainability	0.201	0.035	5.751	***	0.252	*** (p < 0.001)
CIA → Firm Sustainability	0.219	0.035	6.237	***	0.284	*** (p < 0.001)

Note: Structural Equation Modeling (SEM) was used to evaluate the direct effects of Value and Supply Chain Analysis (vsCHA), Cost Analysis (COA), and Continuous Improvement Analysis (CIA) on Firm Sustainability. Significance at the p < 0.001 level.

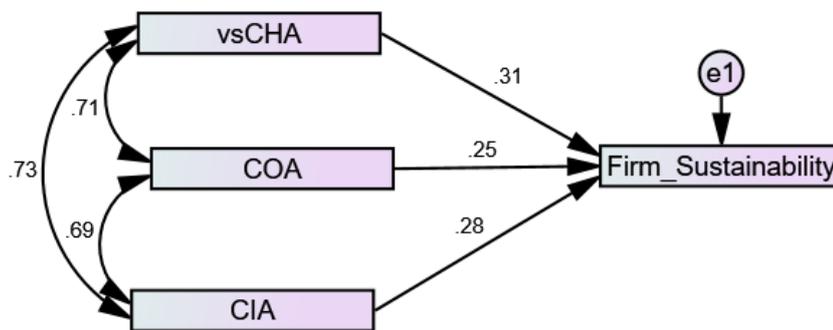
Source: Author’s calculations based on survey data.

Table 11 presents the results of the direct effects of the analytical triad—vsCHA (Value and Supply Chain Analysis), COA (Cost Analysis), and CIA (Continuous Improvement Analysis)—on Firm Sustainability. The analysis shows that all three paths are statistically significant, confirming their direct positive influence on sustainability within businesses. Starting with vsCHA, the unstandardized estimate of 0.216 indicates

a positive relationship with firm sustainability, with a critical ratio (C.R.) of 6.712 and a p-value < 0.001 (highly significant). The standardized estimate of 0.312 further reinforces this, suggesting that vsCHA has a moderate but significant impact on firm sustainability. This indicates that effective value and supply chain management practices are key to fostering sustainable business practices and improving long-term viability. For COA, the unstandardized estimate is 0.201, with a C.R. of 5.751 and a p-value < 0.001, which is also highly significant. The standardized estimate of 0.252 indicates that COA plays an important role in enhancing firm sustainability. By optimizing cost efficiency, resource allocation, and financial management, COA supports sustainable business operations, which are crucial for a firm's longevity and growth. Finally, CIA also demonstrates a significant positive effect on Firm Sustainability. The unstandardized estimate of 0.219, with a C.R. of 6.237 and a p-value < 0.001, confirms that CIA significantly contributes to sustainability efforts. The standardized estimate of 0.284 suggests that continuous improvement practices, which involve constant adaptation and innovation, are vital in helping businesses sustain competitive advantage and operational excellence in the long run.

In summary, vsCHA, COA, and CIA all demonstrate direct, significant, and positive effects on Firm Sustainability. The findings strongly support Hypothesis 4 (H4), which posits that the interaction between these three elements of the analytical triad has a direct positive effect on firm sustainability. Each of these analytical tools plays an essential role in ensuring that businesses remain competitive, efficient, and sustainable in an increasingly dynamic market.

Figure 5: SEM of the Analytical Triad (vsCHA, COA, and CIA) on Firm Sustainability



Note: SEM was used to evaluate the direct effects of Value and Supply Chain Analysis (vsCHA), Cost Analysis (COA), and Continuous Improvement Analysis (CIA) on Firm Sustainability. Significance at the $p < 0.001$ level.

Source: Author's calculations based on survey data.

Figure 5 presents the results of the direct effects of the analytical triad—Value and Supply Chain Analysis (vsCHA), Cost Analysis (COA), and Continuous Improvement Analysis (CIA)—on Firm Sustainability. The analysis confirms that all three elements have a statistically significant and positive influence on business sustainability. The path coefficient of vsCHA, at 0.31, indicates a moderate but significant impact on Firm Sustainability. This suggests that effective value and supply chain management practices play a crucial role in fostering sustainable business operations, enhancing efficiency, and ensuring long-term viability. Similarly, COA demonstrates a strong effect, with a path coefficient of 0.25, highlighting its importance in optimizing cost efficiency, financial management, and resource allocation. This contributes to financial stability and long-term growth, which are essential for sustaining

businesses in competitive environments. Additionally, CIA exhibits a positive path coefficient of 0.28, reinforcing the notion that continuous improvement practices significantly enhance firm sustainability. By fostering a culture of constant adaptation and innovation, businesses can maintain a competitive edge and operational excellence over time. The intercorrelations among vsCHA, COA, and CIA, with values of 0.71, 0.73, and 0.69, respectively, indicate a strong interrelationship between these analytical components, further emphasizing their collective role in ensuring sustainability. The findings strongly support Hypothesis 4 (H4), which posits that the interaction between these three elements of the analytical triad has a direct positive effect on firm sustainability. This highlights the essential role of analytical approaches in maintaining business efficiency, competitiveness, and long-term sustainability in an increasingly dynamic market.

5. Discussion

The discussion section explores the analytical triad (vsCHA, COA, and CIA) in the context of sustainable finance and managerial accounting. The study aims to uncover relationships within (vsCHA, COA, CIA) to gain insights into a profitable and sustainable future. Initially, it examines other authors' contributions, connecting them to the research results. According to Zailani et al. (2023), they emphasized the positive impact of innovations in sustainable finance on supply chain performance. On the other hand, Mburayi & Wall (2018) found that accounting and finance play an important role in the integration of sustainability. Ozili (2023) appreciated the growing international interest in open finance, financial insurance, and financial tools. As for Adıgüzel (2023) focused on the importance of the time-driven activity-based costing system, while further according to, Alfon & Andrews (1999) emphasized the role of cost analysis during the product life cycle. Dunk (2012) pointed out that analyzing costs during the product life cycle and involving customers improves the competitive advantage of a company. Chen et al. (2023 and Herzberg et al. (2023) contributed to understanding the concentration of suppliers and customers in the supply chain. Lulaj (2023) suggested that for sustainable benefits, companies should focus on employee behavior, fast customer service, pre- and post-purchase support, informative applications, product content, payment methods, and transportation services. In addition, Lulaj et al. (2023) emphasized the importance of fulfilling general obligations, improving overall asset performance, increasing net financial income, increasing overall business revenue, and developing employee skills during technological upgrades. According to Riglietti (2022), the role of business continuity management in improving supply chain flexibility is emphasized. Cano et al. (2023) analyzed consumer preferences in digital markets. Elia et al. (2022) identified transparency as a key mechanism of value creation, while McWilliam et al. (2020) announced the evolution of multinational companies in global value chains. Silvi & Cuganesan (2006) presented the concept of CKM (cost knowledge management). The authors Ramos et al. (2021) and Wouters & Morales (2014) emphasized their analysis of the literature and identified areas that are missing in academic publications. Shah et al. (2023) examined the role of strategy and appropriate resources as essential to achieve successful performance, while Kocaoglu et al. (2015) analyzed the impact of ERP (enterprise resource planning), providing opportunities for standardization, stability, and efficiency of business information. As for Ali et al. (2013) highlighted how strategic focus, continuous improvement management, and learning/knowledge sharing positively influence the sustainability of continuous improvement capabilities in a company.

Regarding the results of this research, the key points in each analysis and method within the research are highlighted as follows:

Exploratory factor analysis (EFA): states that pattern analysis (EFA) confirms the creation of three key factors: (vsCHA) value supply chain analysis, (COA) cost analysis, and (CIA) Continuous Improvement Analysis, and their variables related to sustainable finance and managerial accounting. The importance of all variables is confirmed, as their values are above 0.50. The KMO test and Bartlett's test show an excellent fit of the data to the analytical triad model. The reliability analysis (Cronbach's Alpha) shows high levels of reliability for all factors, including vsCHA, COA, and CIA.

Confirmatory factor analysis (CFA): the results of this analysis emphasize that there is an important and significant relationship between the factors of the analytical triad (vsCHA, COA, and CIA), highlighting the high correlation among them. Then, it is emphasized that the variables of each factor (vsCHA, COA, CIA) appear statistically significant, with a value above 0.5, highlighting that there is an important effect between the factor and the variables and vice versa. Furthermore, each variable is of great importance for the vsCHA factor, but the variables vsCHA1 and vsCHA8 have the highest value, which highlights their role in identifying market trends and consumer preferences, as well as in the implementing of sustainable practices in the value and the supply chain. In the COA factor, all variables are very important, but variables COA3 and COA5 are the most important; they stand out for their effect in helping companies determine the feasibility of developing a new product or service, as well as determining the optimal pricing strategy for a company's products and services. In the CIA factor, all variables are very important, but variables CIA7 and CIA3 are of great importance, which stands out for their effect on the company to develop the best ways to achieve its optimal, short-term, or strategic goals.

Model FIT: the results show a very good model fit to the data for the factors (vsCHA, COA, and CIA). The test values, such as CMIN/DF, RMR, GFI, AGFI, NFI, RFI, IFI, TLI, CFI, PClose, and RMSEA, show that the model has an excellent fit to the available data to spotlight the financial sustainability and managerial accounting through the analytical triad. The results of additional tests such as PGFI, LO 90, and HI 90 determine the reliability of the results and conclude that the model is very reliable. In conclusion, these results emphasize the importance and accuracy of the contribution of the factors (vsCHA, COA, and CIA) and their structure in the data analysis for a profitable and sustainable future of businesses.

CFA graphical analysis: according to the CFA graphical analysis, it is noted that there is a strong relationship between vsCHA and CIA with a correlation of $r=.89$, indicating that a careful focus on value and supply chain analysis can serve as an engine for progress and efficient achievement of strategic goals. Then it is emphasized that there is a strong relationship between vsCHA and COA with a correlation of $r=.85$, this interacts positively with the efficiency and cost management in the value and supply chain, suggesting that companies that invest in the analysis of the supply chain value and supply can benefit from more efficient cost management. It is also emphasized that there is a strong relationship between COA and CIA factors with a correlation of $r=.85$, highlighting that efficient cost management is accompanied by a significant focus on process improvement. Therefore, companies should consider their investment in (vsCHA) to improve efficiency and effectiveness in all business processes. Further, companies should focus on (COA) and understand that a deep cost analysis can make a cost more favorable and efficient. Finally, companies must understand that (COA) is closely related to (CIA). The benefits of a well-managed campaign in these two areas can lead to increased efficiency and quality of operations for a sustainable future and profitability. Structural Equation Model (SEM): related to SEM, it is emphasized that the

CIA factor has a total and direct effect on its variables, emphasizing that its influence is very important in finance and managerial accounting. Then the CIA factor also has a significant effect in the factor vsCHA and COA, highlighting its interaction with other factors. The vsCHA factor has an important total and direct effect on its variables; it also has a significant effect on COA. As well as cost analysis (COA), it mediates the indirect effect of continuous improvement analysis (CIA) on value and supply chain analysis (vsCHA) variables. A focused effort on enhancing various processes and analyses can yield significant benefits for businesses.

Standardized total, direct, and indirect effects - two-tailed significance: a) The CIA factor has been identified as highly significant, exhibiting a robust relationship with its associated variables. Additionally, a noteworthy and statistically significant effect has been observed with the vsCHA and COA factors. These findings suggest that a well-implemented continuous improvement strategy may directly influence both sustainable finance and managerial accounting. b) The vsCHA factor has a significant effect with its variables and also has a strong relationship with the COA factor. This result can help to understand the role of value and supply chain analysis in cost management. c) The COA factor is quite important and has a strong relationship with its variables. The analysis shows that there is a complex and intertwined relationship between the vsCHA and CIA factors. This can help in understanding how cost analysis affects sustainable finance and management accounting through vsCHA and COA.

Hypothesis testing: regarding the hypothesis testing, according to the results of the hypothesis (H1), it is emphasized that the value and supply chain analysis (vsCHA) has a significant effect on the cost analysis (COA) in the context of sustainable finance and management accounting for a profitable and sustainable future in business ($p=0.016$). The results support H1, highlighting that there is a complex, direct, and positive effect between vsCHA and COA. In this case, vsCHA helps to identify market trends, adapt the supply chain, and optimize innovation and strategic partnerships. It is recommended that businesses use vsCHA to identify efficiencies and sustainable practices, including optimal pricing strategies and risk management. Further related to hypothesis 2 (H2), it is emphasized that continuous improvement analysis (CIA) has a significant effect on cost analysis (COA) in the context of sustainable finance and managerial accounting for a profitable and sustainable future in businesses ($p=0.010$). The results support H2, highlighting that there is a positive and complex relationship between CIA and COA. In this case, CIA helps to maintain competitive advantage, increase sales, achieve strategic goals, reduce losses, improve production efficiency and product quality, and optimize costs. It is recommended that businesses use CIA to continue with process improvement and optimization. As well as being related to the results of hypothesis 3(H3), it is emphasized that cost analysis (COA) serves as a mediator, confirming the indirect and complex effects of continuous improvement analysis (CIA) on the variables of value and supply chain analysis (vsCHA) in the context of sustainable finance and managerial accounting for a profitable and sustainable future in businesses. The results show that COA is an effective mediator between CIA and vsCHA. The fourth hypothesis (H4) is also validated, where the analytical triad (vsCHA, COA, CIA) has a direct and positive effect on firm sustainability.

SEM graphic analysis: The analytical triad for a profitable and sustainable future in businesses (vsCHA, COA, and CIA) was identified. These three factors constitute an important part of sustainable finance and managerial accounting. The study confirms that vsCHA has a positive and direct impact on COA. Also, the CIA has a positive and complex relationship with the COA. In addition, COA acts as a mediator, confirming the indirect positive effects of the CIA on vsCHA through its influence on COA. To achieve a profitable and sustainable future, the use of vsCHA is recommended to identify market

trends, adapt supply chains, and optimize innovation and strategic partnerships. The CIA is also recommended to maintain a competitive advantage, increase sales, reduce losses, and optimize costs. COA is cited as a key factor in linking the effects of CIA and vsCHA. Additionally, in Figure 5, the importance of the analytical triad in firm sustainability is highlighted in graphical form.

6. Conclusions and Future Studies

This study focused on sustainable finance and management accounting through an analytical triad, comprising value supply chain analysis (vsCHA), cost analysis (COA), and continuous improvement analysis (CIA). The findings underscored a complex and important relationship among these components, demonstrating that the analytical triad is a powerful and reliable model for understanding and improving financial aspects in the context of a profitable and sustainable future for businesses. Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) validated the model's good fit, while the suitability indices confirmed the reliability of the model for businesses. In the structural equation model (SEM), CIA, vsCHA, and COA emerged as key factors for sustainable finance and management accounting, with significant mutual effects. Each factor played a critical role in promoting a profitable and sustainable future for businesses. The vsCHA factor helped identify market trends, pricing strategies, and customer preferences. The CIA factor maintained a competitive advantage through process improvement, and the COA factor acted as an effective intermediary to optimize connections between vsCHA and CIA for a more profitable and sustainable business. Importantly, the analytical triad (vsCHA, COA, and CIA) had a direct positive effect on firm sustainability, enhancing both short-term performance and long-term resilience.

For businesses to achieve a profitable and sustainable future, it is essential to efficiently integrate vsCHA, COA, and CIA into their strategies and practices. This integration provides a competitive advantage and ensures a stable market position. The study also highlighted the importance of interaction between the key factors for optimal overall business performance. While the study was grounded in the Kosovo context, the model's relevance extends beyond this region. The applicability of the analytical triad to companies in other countries could offer valuable insights for businesses worldwide, enhancing global relevance and implications for sustainable finance.

Future research could explore the impact of the analytical triad within specific industries, using the model to predict market developments and consumer trends in the context of sustainable finance. Additionally, the study suggests that businesses may accelerate their path to a profitable and sustainable future by adopting strategies based on triad analysis.

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